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Global Teleradiology Support Node (GTSN)

Topics

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- What services does the GTSN provide?
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What is GTSN?

The Global Teleradiology Support Node (GTSN) is a statistics server.

- Communicates with all fixed Medical Treatment Facility (MTF) servers and remote Deployable TeleRadiology System (DTRS) servers in a fully encrypted format.
- Provides configuration management and software updates in a secure, automated architecture while collecting statistics and configuration information from the fixed MTF and remote DTRS servers with which it communicates.

How does the GTSN work?

- The GTSN server communicates with fixed MTF and remote DTRS servers in a fully encrypted format using port 22 for the Army and Air Force[1] and a port in the 3000 range for the Navy[2].
- The fixed or remote site generally initiates communication with the GTSN server for greater security.
- Communication does not require an open VPN.

[1, 2] *Possible future deployments*

How does the GTSN work?

continued

- All statistics and upgrades moved between fixed MTF or remote DTRS servers and GTSN occur over port 22 using 128 bit or higher SSH encryption.

- The GTSN connects to the server with dual Ethernet interfaces and a (9 pin) serial cable that hooks to the UPS for auto power down.

What services does the GTSN provide?

- Provides software updates using an automated, secure, reversible process over port 22 using SSH.
- Software updates include:
  - Security updates to meet current level of DITSCAP certifications.
  - DICOM library updates as required.
  - Publication of additional applications to the server, for example, Teledermatology, Dentistry, Pathology.

What services does the GTSN provide? continued

- Software updates include:
  - Publication of updated training materials and videos to the server.
  - Updated client viewing tools for use on PC's accessing the server via Web browser.
  - Renewal of license for software based on current service/license contracts for device.

What services does the GTSN provide? continued

- Provides encrypted weekly statistics from all MTF and DTRS servers assigned to it.
- Statistics collected include:
  - Studies received to server: Sending site name, DMIS code (if entered in server), modality type, number of images.
  - Studies sent to a server: Sending site name, DMIS code (if entered in server), modality type, number of images.

What services does the GTSN provide? *continued*

- Statistics collected include:
  - Studies reviewed and marked as “read” in the server by a radiologist including user name of radiologist, date, and time.
  - Reports sent from the server, including destination and modality type.
  - Dental, dermatology[3], opthalmology[4] statistics will be provided as these are collected.

[3, 4] Currently GTSN only collects dental and radiology statistics, but other specialties can be tracked as well.

What services does the GTSN provide? *continued*

- Statistics collected include:
  - Environmental monitoring including: CPU temperature, enclosure temperature, voltage level from internal power supply, fan operating status.[5]
  - RAID drive status for external RAID units (i.e., Heidelberg). Servers with attached RAID shipped July ’04 and later also provide RAID drive status and warnings so site Administrator may be notified when drive needs replacing.

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[5]Monitoring of fan operation applies to 5069 server and all successors.

What services does the GTSN provide? *continued*

- Statistics collected include:
  - RAID drive status information for internal RAID (i.e., 5069). 5069 server provides mirrored RAID and has a live spare as well in some deployed environments.

    This means that when the primary drive fails and the mirror takes over, the GTSN receives a message about the event from the remote server.

What services does the GTSN provide? continued

- Provides warm failover status.

When servers are configured with warm failover architecture, for example, DTRS units in Baghdad and Kuwait and MTF units such as LRMC and 121, the servers notify the GTSN when the primary server is unreachable and traffic has switched to the secondary server.

What services does the GTSN provide? continued

- Provides notification to management in the form of weekly automated messages to APPMO management and servers' vendor for relevant messages. For example, statistics to APPMO.

What services does the GTSN provide? *continued*

- Provides remote configuration backup.

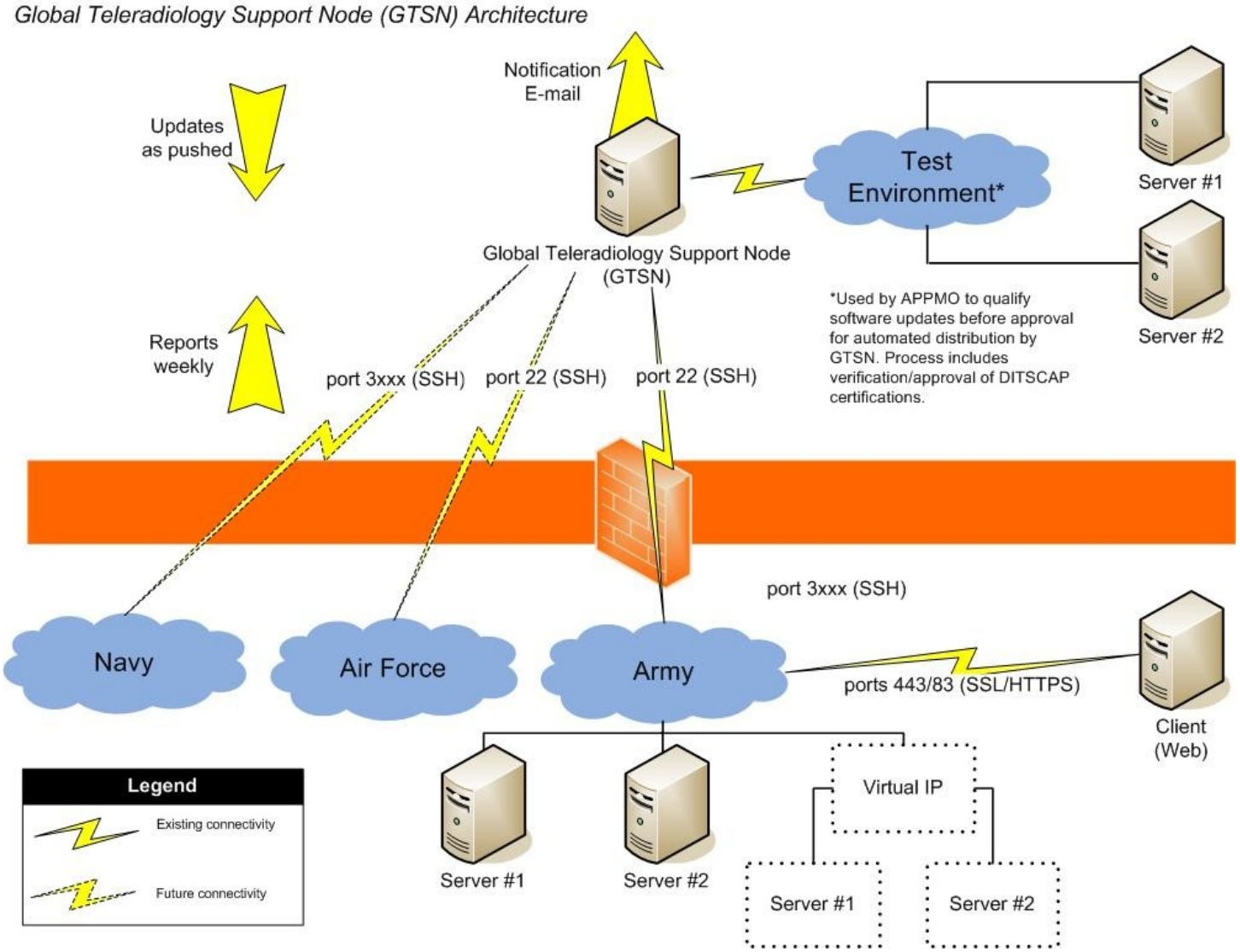
The GTSN serves as a repository for encrypted backup of MTF or DTRS server configuration information. If the MTF or DTRS server has a storage device attached (i.e., DVD, Mag optical, SAN) the database and configuration are also stored daily to the local storage device along with the medical imaging data.

This includes configuration of the internal Medweb packet filter and VPN engine.

Benefits of the GTSN

- ✓ Provides a history of the system's configuration. A tool for comparing today's configuration with previous configurations.
- ✓ Provides information about what fixed MTF servers and DTRS servers in the field are doing on a day-to-day basis. (Analysis of server activities can be useful when scheduling change outs.)
- ✓ Tracks users accessing the system and all communications between servers.

GTSN Architecture



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